What is claimed is:

1. A catalyst for polyester production, comprising a solid titanium compound (I-a) which is obtained by dehydro-drying a hydrolyzate obtained by hydrolyzing a titanium halide and has a molar ratio (OH/Ti) of a hydroxyl group (OH) to titanium (Ti) exceeding 0.09 and less than 4.

2. A catalyst for polyester production, comprising a titanium-containing solid compound (I-b) which is obtained by dehydro-drying a hydrolyzate obtained by hydrolyzing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound and has a molar ratio (OH/Ti) of a hydroxyl group (OH) to titanium (Ti) exceeding 0.09 and less than 4.

3. The catalyst for polyester production as claimed in claim 2, wherein the compound of at least one element selected from elements other than titanium or the precursor of the compound is a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium,

scandium, yttrium, lanthanum, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten, manganese, iron, ruthenium, cobalt, rhodium, nickel, palladium, copper, zinc, boron, aluminum, gallium, silicon, germanium, tin, antimony and phosphorus or a precursor of the compound.

SUB A2 > 4. A catalyst for polyester production, comprising:

a polycondensation catalyst component comprising the solid titanium compound (I-a) of claim 1 and/or the titanium-containing solid compound (I-b) of claim 2, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus.

5. A catalyst for polyester production, comprising:

a polycondensation catalyst component comprising a solid titanium compound (I-c) obtained by dehydro-

298

drying a hydrolyzate obtained by hydrolyzing a titanium halide, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus.

6. The catalyst for polyester production as claimed in claim 5, wherein the co-catalyst component (II) is a magnesium compound.

7. A catalyst for polyester production, comprising a titanium-containing solid compound (I-d) obtained by dehydro-drying a hydrolyzate obtained by hydrolyzing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound.

8. The catalyst for polyester production as claimed in claim 7, wherein the compound of at least one element selected from elements other than titanium or the precursor of the compound is a compound of at

least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, scandium, yttrium, lanthanum, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten, manganese, iron, ruthenium, cobalt, rhodium, nickel, palladium, copper, zinc, boron, aluminum, gallium, silicon, germanium, tin, antimony and phosphorus or a precursor of the compound.

9. A catalyst for polyester production, comprising:

a polycondensation catalyst component comprising the titanium-containing solid compound (I-d) of claim 7 or 8, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus.

10. The catalyst for polyester production as claimed in claim 9, wherein the co-catalyst component (II) is a magnesium compound.

11. A catalyst for polyester production, comprising a solid titanium compound (I-e) obtained by a process comprising bringing a titanium halide into contact with water to hydrolyze the titanium halide and thereby obtain an acid solution containing a hydrolyzate of the titanium halide, rendering the solution basic by the use of a base, then adjusting pH of the solution to 2 to 6 by the use of an acid, and dehydro-drying the resulting precipitate.

5 ~~12~~. A catalyst for polyester production, comprising a solid titanium compound (I-f) obtained by a process comprising bringing a titanium halide into contact with water to hydrolyze the titanium halide and thereby obtain an acid solution containing a hydrolyzate of the titanium halide, adjusting pH of the solution to 2 to 6 by the use of a base, and dehydro-drying the resulting precipitate.

13. A catalyst for polyester production, comprising:

(I) a polycondensation catalyst component comprising the solid titanium compound of claim 11 or 12, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus.

14. The catalyst for polyester production as claimed in claim 13, wherein the co-catalyst component (II) is a magnesium compound.

15. A catalyst for polyester production, comprising a titanium-containing solid compound (I-g) obtained by a process comprising bringing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound into contact with water to hydrolyze the titanium halide and thereby obtain an acid solution containing a hydrolyzate of the titanium halide, rendering the solution basic by the use of a base, then adjusting pH of the solution to 2 to 6 by the use of an acid, and dehydro-drying the resulting precipitate.

16. The catalyst for polyester production as claimed in claim 15, wherein the compound of at least one element selected from elements other than titanium or the precursor of the compound is a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, scandium, yttrium, lanthanum, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten, manganese, iron, ruthenium, cobalt, rhodium, nickel, palladium, copper, zinc, boron, aluminum, gallium, silicon, germanium, tin, antimony and phosphorus, or a precursor of the compound.

17. A catalyst for polyester production, comprising a titanium-containing solid compound (I-h) obtained by a process comprising bringing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound into contact with water to hydrolyze the titanium halide and thereby obtain an acid solution containing a hydrolyzate of the titanium halide, adjusting pH of the solution to 2 to 6 by the use of a base, and dehydro-drying the resulting precipitate.

18. The catalyst for polyester production as claimed in claim 17, wherein the compound of at least one element selected from elements other than titanium or the precursor of the compound is a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, scandium, yttrium, lanthanum, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten, manganese, iron, ruthenium, cobalt, rhodium, nickel, palladium, copper, zinc, boron, aluminum, gallium, silicon, germanium, tin, antimony and phosphorus or a precursor of the compound.

19. A catalyst for polyester production, comprising:

(I) a polycondensation catalyst component comprising the titanium-containing solid compound (I-g) or (I-h) of any one of claims 15 to 18, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus.

20. The catalyst for polyester production as claimed in claim 19, wherein the co-catalyst component (II) is a magnesium compound.

6 ~~21~~. A catalyst for polyester production, comprising a solid titanium compound (I-i) which is obtained by dehydro-drying titanium hydroxide and has a crystallinity, as calculated from an X-ray diffraction pattern having 2θ (diffraction angle) of 18° to 35°, of not more than 50 %.

7 ~~22~~. A catalyst for polyester production, comprising:

(I) a polycondensation catalyst component comprising the solid titanium compound (I-i) of claim 6 ~~21~~, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus.

8 ~~23~~. A catalyst for polyester production, comprising a slurry obtained by heating a mixture of:

(A-1) a hydrolyzate (I-j) obtained by hydrolyzing a titanium compound or a hydrolyzate (I-k) obtained by hydrolyzing a mixture of a titanium compound and a compound of at least one element selected from elements other than titanium or a precursor of the compound,

(B) a basic compound, and

(C) an aliphatic diol.

9 ~~24~~. The catalyst for polyester production as claimed in claim 8 ~~23~~, wherein the basic compound (B) is at least one compound selected from tetraethylammonium hydroxide, tetramethylammonium hydroxide, aqueous ammonia, sodium hydroxide, potassium hydroxide, N-ethylmorpholine and N-methylmorpholine.

10 ~~25~~. The catalyst for polyester production as claimed in claim 8 ~~23~~ or 9 ~~24~~, wherein the aliphatic diol (C) is ethylene glycol.

11 ~~26~~. A catalyst for polyester production, comprising:

(A-2) a hydrolyzate (I-m) obtained by hydrolyzing a titanium halide or a hydrolyzate (I-n) obtained by hydrolyzing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound, and

(D) a metallic phosphate containing at least one element selected from beryllium, magnesium, calcium, strontium, boron, aluminum, gallium, manganese, cobalt and zinc.

12 ~~27~~. The catalyst for polyester production as claimed in claim 11 ~~26~~, wherein the metallic phosphate (D) is magnesium hydrogenphosphate or trimagnesium diphosphate.

13 ~~28~~. A catalyst for polyester production, comprising a slurry obtained by heating a mixture of:

(A-2) a hydrolyzate (I-m) obtained by hydrolyzing a titanium halide or a hydrolyzate (I-n) obtained by hydrolyzing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound,

(E) a metallic compound containing at least one element selected from beryllium, magnesium, calcium, strontium, boron, aluminum, gallium, manganese, cobalt and zinc,

(F) at least one phosphorus compound selected from phosphoric acid and phosphoric esters, and

(G) an aliphatic diol.

14 ~~29~~. The catalyst for polyester production as claimed in claim 13 ~~28~~, wherein the metallic compound (E) is a magnesium compound, the phosphorus compound (F) is phosphoric acid or trimethyl phosphate, and the aliphatic diol (G) is ethylene glycol.

15 ~~30~~. The catalyst for polyester production as claimed in claim 13 ~~28~~ or 14 ~~29~~, wherein the heating temperature of the mixture of the components (A-2), (E), (F) and (G) is in the range of 100 to 200°C, and the heating time is in the range of 3 minutes to 5 hours.

SUB A_3 >

31. A process for producing a polyester, comprising polycondensing an aromatic dicarboxylic acid or an ester-forming derivative thereof and an

aliphatic diol or an ester-forming derivative thereof in the presence of the catalyst as claimed in any one of claims 1 to 30.

END A3

17 ~~32~~. A process for producing a polyester, comprising an esterification step in which an aromatic dicarboxylic acid or an ester-forming derivative thereof and an aliphatic diol or an ester-forming derivative thereof are esterified to form a low condensate and a polycondensation step in which the low condensate is polycondensed in the presence of a polycondensation catalyst to increase the molecular weight, wherein:

the polycondensation catalyst used is a catalyst comprising:

(I) a polycondensation catalyst component comprising a hydrolyzate (I-j) obtained by hydrolyzing a titanium compound or a hydrolyzate (I-k) obtained by hydrolyzing a mixture of a titanium compound and a compound of at least one element selected from elements other than titanium or a precursor of the compound, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group

consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus;

and

the polycondensation catalyst component (I) is added to the esterification reactor before the beginning of the esterification reaction or immediately after the beginning of the esterification reaction.

18 ~~33~~. The process for producing a polyester as claimed in claim 17 ~~32~~, wherein the co-catalyst component (II) is a magnesium compound.

19 ~~34~~. A process for producing a polyester, comprising polycondensing an aromatic dicarboxylic acid or an ester-forming derivative thereof and an aliphatic diol or an ester-forming derivative thereof in the presence of a polycondensation catalyst selected from the following catalysts (1) to (3) and a phosphoric ester to produce a polyester;

(1) a polycondensation catalyst comprising a hydrolyzate (I-m) obtained by hydrolyzing a titanium halide,

(2) a polycondensation catalyst comprising a hydrolyzate (I-n) obtained by hydrolyzing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound, and

(3) a polycondensation catalyst comprising:

the hydrolyzate (I-m) or (I-n), and

a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium and antimony, a phosphate or a phosphite.

20 ~~35~~. The process for producing a polyester as claimed in claim 19 ~~34~~, wherein the phosphoric ester is tributyl phosphate, trioctyl phosphate or triphenyl phosphate.

21 ~~36~~. A process for producing a polyester, comprising polycondensing an aromatic dicarboxylic acid or an ester-forming derivative thereof and an aliphatic diol or an ester-forming derivative thereof in the presence of a polycondensation catalyst selected from the following catalysts (1) to (3) and

at least one compound selected from cyclic lactone compounds and hindered phenol compounds to produce a polyester;

(1) a polycondensation catalyst comprising a hydrolyzate (I-m) obtained by hydrolyzing a titanium halide,

(2) a polycondensation catalyst comprising a hydrolyzate (I-n) obtained by hydrolyzing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound, and

(3) a polycondensation catalyst comprising:

the hydrolyzate (I-m) or (I-n), and

a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium and antimony, a phosphate or a phosphite.

22 ~~37~~. The process for producing a polyester as claimed in claim 21 ~~38~~, wherein at least one phosphorus compound selected from phosphoric acid and phosphoric esters is further used in combination.

~~38~~ 23. The process for producing a polyester as claimed in claim ~~36~~ 21 or ~~37~~ 22, wherein the at least one compound selected from cyclic lactone compounds and hindered phenol compounds is a mixture of 5,7-di-t-butyl-3-(3,4-dimethylphenyl)-3H-benzofuran-2-one, tetrakis(methylene-3(3,5-di-t-butyl-4-hydroxyphenyl)propionate)methane and tris(2,4-di-t-butylphenyl)phosphite.

~~39~~ 24. A process for producing a polyester, comprising an esterification step in which an aromatic dicarboxylic acid or an ester-forming derivative thereof and an aliphatic diol or an ester-forming derivative thereof are esterified to form a low condensate and a polycondensation step in which the low condensate is polycondensed in the presence of a polycondensation catalyst to increase the molecular weight, wherein:

the polycondensation catalyst used is a catalyst comprising:

(I) a polycondensation catalyst component comprising a hydrolyzate (I-m) obtained by hydrolyzing a titanium halide or a hydrolyzate (I-n) obtained by hydrolyzing a mixture of a titanium halide and a

compound of at least one element selected from elements other than titanium or a precursor of the compound, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus;

and

a tint adjusting agent is added in the esterification step or the polycondensation step.

25 ~~40~~. The process for producing a polyester as claimed in claim 24 ~~39~~, wherein the tint adjusting agent is at least one agent selected from Solvent Blue 104, Pigment Red 263, Solvent Red 135, Pigment Blue 29, Pigment Blue 15:1, Pigment Blue 15:3, Pigment Red 187 and Pigment Violet 19.

26 ~~41~~. The process for producing a polyester as claimed in claim 24 ~~39~~ or 25 ~~40~~, wherein the co-catalyst component (II) is a magnesium compound.

27 ~~42~~. A method for treating a polyester, comprising bringing a polyester, which is obtained by the use of a titanium compound catalyst and in which the reaction has been completed, into contact with a phosphorous acid aqueous solution, a hypophosphorous acid aqueous solution, a phosphoric ester aqueous solution, a phosphorous ester aqueous solution or a hypophosphorous ester aqueous solution, each of said solutions having a concentration of not less than 10 ppm in terms of phosphorus atom.

28 ~~43~~. The method for treating a polyester as claimed in claim 27 ~~42~~, wherein the polyester has an intrinsic viscosity of not less than 0.50 dl/g, a density of not less than 1.37 g/cm^3 and an acetaldehyde content of not more than 5 ppm.

29 ~~44~~. The method for treating a polyester as claimed in claim 27 ~~42~~ or 28 ~~43~~, wherein polyethylene terephthalate, which is obtained by the use of a titanium compound catalyst and in which the reaction has been completed, is treated.

~~45~~ 30. A method for treating a polyester, comprising bringing a polyester, which is obtained by the use of a titanium compound catalyst and in which the reaction has been completed, into contact with an organic solvent.

~~46~~ 31. The method for treating a polyester as claimed in claim ~~45~~ 30, wherein the polyester has an intrinsic viscosity of not less than 0.50 dl/g, a density of not less than 1.37 g/cm^3 and an acetaldehyde content of not more than 5 ppm.

~~47~~ 32. The method for treating a polyester as claimed in claim ~~45~~ 30 or ~~46~~ 31, wherein the organic solvent is a solvent selected from alcohols, saturated hydrocarbons and ketones.

SUB A4 48. The method for treating a polyester as claimed in any one of claims 45 to 47, wherein the organic solvent is isopropanol or acetone.

49. The method for treating a polyester as claimed in any one of claims 45 to 48, wherein polyethylene terephthalate, which is obtained by the

use of a titanium compound catalyst and in which the reaction has been completed, is treated.

END A4

~~50~~ 35. A method for treating a polyester, comprising bringing a polyester, which is obtained by the use of a titanium compound catalyst and in which the reaction has been completed, into contact with an organic solvent solution of phosphoric acid, an organic solvent solution of a phosphoric ester, an organic solvent solution of phosphorous acid, an organic solvent solution of hypophosphorous acid, an organic solvent solution of a phosphorous ester or an organic solvent solution of a hypophosphorous ester, each of said solutions having a concentration of not less than 10 ppm in terms of phosphorus atom.

~~51~~ 36. The method for treating a polyester as claimed in claim ~~50~~ 35, wherein the polyester has an intrinsic viscosity of not less than 0.50 dl/g, a density of not less than 1.37 g/cm^3 and an acetaldehyde content of not more than 5 ppm.

~~52~~ 37. The method for treating a polyester as claimed in claim ~~50~~ 35 or ~~51~~ 36, wherein the phosphoric

ester is tributyl phosphate, triphenyl phosphate or trimethyl phosphate.

SUB A_5 >

53. The method for treating a polyester as claimed in any one of claims 50 to 52, wherein the organic solvent is a solvent selected from alcohols, saturated hydrocarbons and ketones.

54. The method for treating a polyester as claimed in any one of claims 50 to 53, wherein the organic solvent is isopropanol or acetone.

55. The method for treating a polyester as claimed in any one of claims 50 to 54, wherein polyethylene terephthalate, which is obtained by the use of a titanium compound catalyst and in which the reaction has been completed, is treated.

56. A polyester (P-1) obtained by polycondensing an aromatic dicarboxylic acid or an ester-forming derivative thereof and an aliphatic diol or an ester-forming derivative thereof in the presence of the catalyst for polyester production as claimed in claim 6 or 10, wherein the titanium content is in the range

of 1 to 100 ppm, the magnesium content is in the range of 1 to 200 ppm, and the weight ratio (Mg/Ti) of magnesium to titanium is not less than 0.01.

42 ~~57~~. The polyester (P-1) as claimed in claim 41 ~~56~~, which is polyethylene terephthalate

43 ~~58~~. A polyester (p-2) having the following properties:

a titanium atom is contained in an amount of 0.1 to 200 ppm,

a metal atom M selected from beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc and antimony is contained in an amount of 0.1 to 500 ppm,

the molar ratio (titanium atom/metal atom M) of the titanium atom to the metal atom M is in the range of 1/50 to 50/1, and

a tint adjusting agent is contained in an amount of 0.01 to 100 ppm.

44 ~~59~~. A polyester (p-3) having the following properties:

the intrinsic viscosity is not less than 0.50 dl/g,

a titanium atom is contained in an amount of 0.1 to 200 ppm,

a metal atom M selected from beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc and antimony is contained in an amount of 0.1 to 500 ppm,

the molar ratio (titanium atom/metal atom M) of the titanium atom to the metal atom M is in the range of 0.05 to 50, and

the content of acetaldehyde is not more than 4 ppm, and when this acetaldehyde content is taken as W_0 ppm and a content of acetaldehyde in a stepped square plate molded product obtained by heating said polyester to a temperature of 275°C to melt it and molding the molten polyester is taken as W_1 ppm, the value of W_1-W_0 is not more than 10 ppm.

45 ~~60~~. The polyester (P-3) as claimed in claim 44 ~~59~~, wherein the titanium atom is derived from a polycondensation catalyst obtained by hydrolysis of a titanium halide.

46 ~~61~~. The polyester (P-3) as claimed in claim 44 ~~59~~ or 45 ~~60~~, which is polyethylene terephthalate.

47 ~~49~~ ~~62~~. A polyester (P-4) having the following properties:

the intrinsic viscosity is not less than 0.50 dl/g,

a titanium atom is contained in an amount of 0.1 to 200 ppm,

a metal atom M selected from beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc and antimony is contained in an amount of 0.1 to 500 ppm,

the molar ratio (titanium atom/metal atom M) of the titanium atom to the metal atom M is in the range of 0.05 to 50, and

the content of a cyclic trimer is not more than 0.5 % by weight, and when this cyclic trimer content is taken as x % by weight and a content of a cyclic trimer in a stepped square plate molded product obtained by heating said polyester to a temperature of 290°C to melt it and molding the molten polyester is taken as y % by weight, x and y satisfy the following relation

$$y \leqq -0.2x+0.2.$$

48 ~~63~~. The polyester (P-4) as claimed in claim 47 ~~62~~, wherein the titanium atom is derived from a polycondensation catalyst obtained by hydrolysis of a titanium halide.

49 ~~64~~. The polyester (P-4) as claimed in claim 47 ~~62~~ or 48 ~~63~~, which is polyethylene terephthalate.

65. A polyester (P-5) having the following properties:

when the ratio (L/T) of a flow length (L) to a flow thickness (T) in the injection molding of said polyester at 290°C is taken as Y and the intrinsic viscosity of a molded product obtained by the injection molding is taken as X (dl/g), X and Y satisfy the following relation

$Y \geqq 647-500X$.

66. The polyester (P-5) as claimed in claim 65, which is obtained by polycondensing an aromatic dicarboxylic acid or an ester-forming derivative thereof and an aliphatic diol or an ester-forming derivative thereof in the presence of a

polycondensation catalyst comprising a hydrolyzate (I-m) obtained by hydrolyzing a titanium halide.

67. The polyester (P-5) as claimed in claim 65, which is obtained by polycondensing an aromatic dicarboxylic acid or an ester-forming derivative thereof and an aliphatic diol or an ester-forming derivative thereof in the presence of a polycondensation catalyst comprising a hydrolyzate (I-n) obtained by hydrolyzing a mixture of a titanium halide and a compound of at least one element selected from elements other than titanium or a precursor of the compound.

68. The polyester (P-5) as claimed in claim 67, wherein the compound of at least one element selected from elements other than titanium or the precursor of the compound is a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, scandium, yttrium, lanthanum, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten, manganese, iron, ruthenium, cobalt, rhodium, nickel, palladium, copper, zinc, boron, aluminum, gallium,

silicon, germanium, tin, antimony and phosphorus or a precursor of the compound.

69. The polyester (P-5) as claimed in claim 65, which is obtained by polycondensing an aromatic dicarboxylic acid or an ester-forming derivative thereof and an aliphatic diol or an ester-forming derivative thereof in the presence of:

(I) the polycondensation catalyst of any one of claims 66 to 68, and

(II) a co-catalyst component comprising a compound of at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, boron, aluminum, gallium, manganese, cobalt, zinc, germanium, antimony and phosphorus.

70. The polyester (P-5) as claimed in claim 69, wherein the co-catalyst compound (II) is a magnesium compound.

71. The polyester (P-5) as claimed in claim 70, wherein the titanium atom content is in the range of 1 to 100 ppm, the magnesium atom content is in the range of 1 to 200 ppm, and the weight ratio (Mg/Ti) of the

magnesium atom to the titanium atom is not less than 0.01.

A

72. The polyester (P-5) as claimed in any one of claims 65 to 71, which is polyethylene terephthalate.

~~73~~ 50. A molded product obtained from the polyester (P-1) as claimed in any one of claims ~~56~~ 41 to ~~57~~ 42.

~~74~~ 51. The molded product as claimed in claim ~~73~~ 50, which is a blow molded article.

~~75~~ 52. The molded product as claimed in claim ~~73~~ 50, which is a film or a sheet.

~~76~~ 53. The molded product as claimed in claim ~~73~~ 50, which is a fiber.

SUB A_6 > 77. A blow molded article obtained from the polyester (P-4) as claimed in any one of claims 62 to 64 and having a cyclic trimer content of not more than 0.6 % by weight.

78. A preform for a blow molded article, which is obtained from the polyester (P-5) as claimed in any one of claims 65 to 72.

79. A blow molded article obtained from the polyester (P-5) as claimed in any one of claims 65 to 72.

END A6